**IN THE CLAIMS**

1. **(currently amended)** A router for automatically generating an IP address comprising a position identifier portion and an interface identifier portion, said router comprising:

a routing table for storing each position identifier portion and information on an output route for the position identifier portion, said routing table being referred to for routing a received IP packet from an IP network to an output route on an output port to which is connected an IP network and the received IP packet is transmitted corresponding to a destination position identifier portion of said received IP packet;

a determining unit for determining for each of a plurality of ports of said router whether a position identifier portion is assigned to an IP network to which the port is connected;

a position identifier portion generating unit for newly-generating a position identifier portion <u>without specially communicating with another apparatus for generating the position identifier and without using information on a port and information on an apparatus connected to the port,</u> by using only all of said position identifier portions registered in said routing table ~~without using information on the port and information on an apparatus connected to the port~~ when said determining unit determines that the position identifier portion is not assigned to the port, said newly-generated position identifier portion <u>being</u> different from all of the position identifier portions registered in said routing table for the port <u>and</u> being generated by comparing with all of said position identifier portions registered in said routing table ~~without communicating with another apparatus~~;

a routing unit for receiving routing information including a position identifier portion according to a dynamic routing protocol and registering the routing information in said routing table, and registering routing information including the position identifier portion generated by said position identifier portion generating unit in said routing table and notifying another router of the routing information; and

a position identifier portion advertising unit for advertising the generated position identifier portion from the port on the position identifier portion.

2. (original) A router as claimed in claim 1,

wherein said determining unit determines whether a position identifier portion is assigned to the network to which the port is connected on the basis of whether a position identifier portion advertised according to a neighbor discovery protocol for IPv6 is received from said port.

3. (previously presented) A router as claimed in claim 1,

wherein said position identifier portion generating unit generates a random number and compares the generated random number with all of said position identifier portions registered in said routing table, and repeats generating and comparing another random number with all of said position identifier portions registered in said routing table when the generated random number matches one of said position identifier portions registered in said routing table, to thereby generate the position identifier portion using the generated random number that does not match all of said position identifier portions registered in said routing table without transmitting said random number to another apparatus.

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4. (previously presented) A router as claimed in claim 1,

wherein said position identifier portion generating unit generates said position identifier portion by incrementing a maximum position identifier portion registered in said routing table, thereby the incremented number does not match all of said position identifier portions registered in said routing table.

5. (previously presented) A router for automatically generating an IP address comprising a position identifier portion and an interface identifier portion, said router comprising:

a routing table for storing each position identifier portion and information on an output route for the position identifier portion;

a determining unit for determining for each of a plurality of ports whether a position identifier portion is assigned to a network to which the port is connected;

a position identifier portion generating unit for referring to said routing table and generating a position identifier portion different from the position identifier portion registered in said routing table for a port not assigned a position identifier portion;

a routing unit for receiving routing information including a position identifier portion according to a dynamic routing protocol and registering the routing information in said routing table, and registering routing information including the position identifier portion generated by said position identifier portion generating unit in said routing table and notifying another router of the routing information; and

a position identifier portion advertising unit for advertising the generated position

identifier portion from the port,

wherein said IP address is an IPv6 aggregatable unicast global address; and

said position identifier portion generating unit generates an SLA value of least significant

16 bits different from SLA values of least significant 16 bits of all position identifier portions

registered in said routing table, said position identifier portions having most significant 48 bits

identical with most significant 48 bits assigned to the router, and generates said position

identifier portion by combining the SLA value with the most significant 48 bits.

6. (previously presented) A router for automatically generating an IP address comprising

a position identifier portion and an interface identifier portion, said router comprising:

a routing table for storing each position identifier portion and information on an output

route for the position identifier portion;

a determining unit for determining for each of a plurality of ports whether a position

identifier portion is assigned to a network to which the port is connected;

a position identifier portion generating unit for referring to said routing table and

generating a position identifier portion different from the position identifier portion registered in

said routing table for a port not assigned a position identifier portion;

a routing unit for receiving routing information including a position identifier portion

according to a dynamic routing protocol and registering the routing information in said routing

table, and registering routing information including the position identifier portion generated by

said position identifier portion generating unit in said routing table and notifying another router of the routing information; and

a position identifier portion advertising unit for advertising the generated position identifier portion from the port,

wherein said IP address is an IPv6 site-local address; and

said position identifier portion generating unit generates a subnet ID of least significant 16 bits different from subnet IDs of least significant 16 bits of all position identifier portions registered in said routing table, said position identifier portions having most significant 48 bits identical with most significant 48 bits set fixedly, and generates said position identifier portion by combining the subnet ID with the most significant 48 bits.


7. (original) A router as claimed in claim 1, further comprising a routing unit for receiving routing information including a position identifier portion according to a dynamic routing protocol and registering the routing information in said routing table, and notifying another router of routing information including the position identifier portion generated by said position identifier portion generating unit.